AMENDMENTS TO THE SPECIFICATION

Please insert the following new paragraph after paragraph [1009]:

[1009.1]   In at least one embodiment, the invention provides an arbiter coupled to supply control information for use of resources. The arbiter is coupled to receive requests from users for use of the resources during a particular access interval. The arbiter is responsive to a first group of requests received prior to the start of a first arbitration cycle to determine allocation of the resources during the first arbitration cycle according to the first group of requests and to receive at least a second plurality of requests after the start of the first arbitration cycle, and to determine additional allocation of the resources according to the second group of requests during a second arbitration cycle. The second arbitration cycle is shorter than the first arbitration cycle. The first and second arbitration cycles allocate resources for use during the particular access interval.

Please replace paragraph [1035] with the following amended paragraph:

[1035]   In some circumstances, multiple users may have requested a resource during one or more previous arbitration cycles. Many different approaches can be utilized to determine which of the users should get the speculative grant. For example, referring again to Fig. 4, one simple approach is to grant access to the user who requested the resource in the immediately previous arbitration cycle or to the last user to utilize the resource if the resource was not utilized in the previous interval. Thus, in Fig. 4, since user A requested the resource in ARB1, user A is speculatively granted the resource in ARB2 even ~~through~~ though no request has been received.

Please replace paragraph [1036] with the following amended paragraph:

[1036]   Other approaches are possible to select among multiple users. For example, users may be chosen utilizing a round-robin

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approach, or may be selected randomly (pseudo-randomly as usually implemented). Users may be selected according to a fixed priority scheme, or may be selected using an arbitration scheme in which the user with the fewest requests is granted the resource first. The arbiter may ~~chose~~ choose to allocate a resource speculatively to the user that has had the most requests for the resource during a predetermined number of previous arbitration cycles. The number of arbitration cycles utilized depends on the implementation of the arbiter and the application in which the arbiter is being used, and may vary from, e.g., two cycles, to tens or hundreds of arbitration cycles. In another embodiment, the arbiter may ~~chose~~ choose to allocate a resource speculatively to the user that has had the most grants for the resource during a predetermined number of previous arbitration cycles. The arbiter may ~~chose~~ choose to allocate a resource speculatively to the user that has had the most requests or most grants for all resources combined during a predetermined number of previous arbitration cycles.

Please replace paragraph [1037] with the following amended paragraph:

[1037]   The arbiter may ~~chose~~ choose to allocate a resource speculatively to the user that has had the highest fill-level for the send queue associated with the resource to be scheduled, the fill-level either being the current fill-level or the fill-level averaged over the last n arbitration cycles, where n is implementation and application dependent. For example, referring to Fig. 5, each node 121, 123 and 125 may have send queues associated with each of the output ports. The fill level for the particular queue can be sent to the arbiter 501 along with the request for each of the output ports.